DOCUMENT RESUME

ED 413 552 CG 028 094

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TITLE Gender Differences in Causal Attributions of Imagined Performance on English, History, and Math Exams.
PUB DATE 1997-00-00
NOTE 12p.; Paper presented at the Annual Meeting of the American Psychological Association (9th).
PUB TYPE Reports - Research (143) -- Speeches/Meeting Papers (150)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Academic Achievement; Academic Failure; *Attribution Theory; Causal Models; College Students; *Grades (Scholastic); Higher Education; Psychological Characteristics; Self Esteem; *Sex Differences; *Student Attitudes
IDENTIFIERS *Gender Issues

ABSTRACT

This study investigated gender differences in causal attributions and emotions to success and failure. A literature review on gender differences in causal attributions revealed inconsistencies. For the present study, college students (N=247) filled out questionnaires and were also asked to imagine varying degrees of success in college courses. The results indicate that gender differences in causal attributions do exist. Females, compared to males, favored effort attributions (paying attention and studying) for successful outcomes. For failure outcomes, males, more than females, thought that a lack of studying was responsible. Thus, males protected their self-confidence in failure situations by blaming a poor performance on an unstable cause that can be changed in the future. Females viewed the lack of ability as a more important cause for a failing grade than did males. Emotions also differed, with males indicating that they would derive more confidence after receiving an A than females. Females felt more like failures than did males after receiving an F. It was found that gender differences in causal attributions depended on the gender-type of the subject matter. (RJM)

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Gender Differences in Causal Attributions of Imagined Performance on English, History, and Math Exams[1]

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Abstract

Gender differences in causal attributions and emotions to success and failure were investigated. Males took more credit for success but less responsibility for failure, and felt more confident than did females. Following failure, females felt more like a failure than did males. Some of the gender differences in causal attributions, especially for successful outcomes, depended on the gender-type of the subject matter.

Causal attributions for achievement have been studied extensively over the past 25 years. Weiner (e.g., 1974) originally categorized causal attributions along two dimensions: stability and locus of control. Although Weiner (e.g., 1985) added a third dimension, controllability, most research on gender differences in causal attributions has focused on his two original dimensions. The attributions for achievement outcomes that have received the most empirical attention include ability (internal, stable), effort (internal, unstable), task difficulty (external, stable), and luck (external, unstable). In general, participants attribute greater responsibility to ability and effort in explaining their successes than do participants explaining their failures, whereas failure participants attribute greater responsibility to task difficulty than do success participants (Arkin & Maruyama, 1979; Elig & Frieze, 1979; Gilmor & Reid, 1979).

Methodological issues

Falbo and Beck (1979) discovered that only 23% of the causal attributions participants made spontaneously "could be classified in terms of the Weiner et al. (1971) model. Effort constituted 13% of the total; Ability, 8%; Task Difficulty, 1%; and Luck, less than 1%" (Falbo & Beck, 1979, p. 188). An intriguing question is what causal attributions constitute the other 77% of responses. To address this issue, the present research allowed pilot test participants to list the causes of receiving an A or an F in one of three subject matters. These free responses were then used in a closed-ended format on a separate set of participants. It was hoped that this approach would yield the kinds of causal attributions that people make spontaneously. It was hypothesized that females' attributions would be less self-enhancing than males' but that causal attributions would also depend greatly on the gender-type of the subject matter.

Gender differences in causal attributions

An impressive amount of research has investigated gender differences in causal attributions. Some of the research suggests that women attribute outcomes, especially success, more externally (Feather, 1969; Meehan & Overton, 1986; Pasquella, Mednick, & Murray, 1981; Simon & Feather, 1973; Viaene, 1979; Zuckerman, 1979) or more to effort rather than ability (Erkut, 1983; Ickes & Layden, 1978; Parsons, Meece, Adler, & Kaczala, 1982; LaNoue & Curtis, 1985; Wiegers & Frieze, 1977) than men. For failures, males see internal causes, especially a lack of ability as less important than do females (Basow & Medcalf, 1988; D'Amico, Baron, & Simons, 1995; Ickes & Layden, 1978; LaNoue & Curtis, 1985). This has been confirmed cross-culturally in German (Rustemeyer & Jubel, 1996) and Japanese (Little & Lopez, 1997) students. Males' causal attributions resemble those of individuals high in self-esteem, whereas females' causal attributions resemble those of individuals low in self-esteem (Ickes & Layden, 1978). The implication is that by making external attributions women do not take credit for success and thereby denigrate their abilities, whereas men stress the importance of their ability in achieving success. This has been interpreted as evidence for the operation of a "self-enhancing" bias in men and of a "self-derogatory" bias in women (Bar-Tal & Frieze, 1977; Berg, Stephan, & Dodson, 1981; Erkut, 1983; Heilman & Kram, 1978; Levine, Gillman, & Reis, 1982; Levine, Reis, Sue, & Turner, 1976; Simon & Feather, 1973; Zuckerman, 1979).

Gender differences are not restricted to self-attributions. People's causal attributions regarding the performance of others are affected by the gender of the other person. A meta-analysis found that for successes on masculine tasks, higher ability is attributed to males than to females, and higher effort attributed to females than to males. For failures, lower effort and bad luck are more likely to be attributed to males than to females, and greater task difficulty is attributed to females than to males (Swim & Sanna, 1996). It should be pointed out that the effect sizes were small (Swim & Sanna, 1996).

Findings of no gender differences in causal attributions

The literature on gender differences in causal attributions is not entirely consistent. For example, meta-analyses by Sohn (1982) and Whitley, McHugh, and Frieze (1986) found few consistent gender differences in causal attributions. No evidence for gender differences in causal attributions for success and failure was found by Martin, Kovac, and Hryshko (1989) and Travis, Phillippi, and Henley (1991). Some of these inconsistencies may be due to neglecting the role of situational variables in causal attributions (McHugh, Frieze, & Hanusa, 1982). In masculine domains such as mathematics, girls attribute success less to ability and more to hard work and failure more to lack of ability than do boys (Birenbaum & Kraemer, 1995; Gilbert, 1996; Rosenfield & Stephan, 1978). This gender difference in attributions was not found for languages which are traditionally viewed as feminine (Birenbaum & Kraemer, 1995). The gender-type of a domain has been found to also affect gender differences in expectancies and the accuracy of self-evaluations (Beyer, 1990; Beyer & Bowden, 1997). For this reason, the effect of the gender-type of the subject matter on gender differences in causal attributions will be

[1] Presented at the ninth annual convention of the American Psychological Association

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investigated.

This research was conducted to provide another test of gender differences in causal attributions. However, methodological problems with Weiner's (1974) two-dimensional categorization system exist. Therefore the present research used a different approach for assessing causal attributions.

Method

Participants

Two hundred and forty-seven students (157 females and 90 males) at a university in the Midwest participated in the study.

Materials

Participants filled out four questionnaires: The Life Orientation Test (LOT; Scheier, Carver, & Bridges, 1994) which measures optimism, the Locus of Control scale, Zung's (1965) Self-Rating of Depression Scale (SDS), and the Rosenberg Self-Esteem Scale (Rosenberg, 1965). The LOT contains ten questions that are rated on a scale from 0 (strongly disagree) to 4 (strongly agree). High scores reveal optimism. The Locus of Control scale contains 40 questions that are responded to in a Yes/No format. An example of an item revealing an external locus of control is "Some people are just born lucky." High scores indicate an external locus of control. The SDS contains 40 items which are answered in terms of how each item applies to the person at the time of testing. The ratings are on a 4-level scale from "a little of the time" to "most of the time." A sample item is "I feel down-hearted and blue." High scores are indicative of greater depression. The Rosenberg Self-Esteem Scale consists of 10 questions that are rated on a scale from 1 (strongly agree) to 4 (strongly disagree). A sample item is "I feel that I have a number of good qualities." The lower the score, the higher a person's self-esteem.

Procedure

Subsequent to filling out the questionnaires, participants were asked to imagine having received a certain grade in a course which was important for their graduation. The names of the courses and course numbers represented actual courses taught at the university. They were selected because they represent the lowest-level courses receiving college credit in the subject area. The courses were also selected to represent a feminine, neutral, and masculine domain, respectively (as determined by pilot testing). The following feminine, neutral, and masculine courses, respectively, were used: Composition and Reading (English 101), Evolution of US History (HIST 101), and College Algebra I (Math 111). Participants received the instructions to "Vividly imagine that you are in the following situation. You are currently enrolled in [name of course and course number substituted here], which is a required course for graduation at this university. You just received an A on your last exam." Approximately half of the participants were asked to imagine that they had received an F.

Unlike previous investigations, the present study did not exclusively rely on Weiner's causal attributions (effort, ability, task difficulty, and luck). An open-ended pretest had determined that seven attributions for successful outcomes should be included in a closed-ended format: I studied effectively; I paid attention in class and went to class regularly; The test was easy; I am very interested in the subject; I am good at (subject area); I was lucky; I am a very motivated student. Nine causes for unsuccessful outcomes were used: I just did not want to study; I did not have time to study; I studied the wrong material; The test was difficult; I did not pay attention in class and/or skipped class often; The subject is not interesting to me; I am not very good at (subject); I was unlucky; I am not very motivated in school.

Similarly, five positive emotions experienced after success (I am proud of my accomplishment; I am relieved; I am motivated to continue to do well; I feel confident; I am happy and in a generally good mood) and seven negative emotions experienced after failure (I am disappointed in myself; I am angry at myself; I am angry at (fill in the blank); I am worried about how I will do on future exams. I am worried whether (fill in the blank) will think that I am a failure; I am ashamed of myself; I feel like a failure) were included based on the results of the pretest.

Participants were supplied with the list of potential causes for an A (F) that had been determined by the pilot test. More causes for Fs than As were provided in accordance with the results from the pilot study. Participants first checked each cause of their grade that applied, then ranked the importance of the checked causes, and then rated the importance of each checked cause from 1 (very important) to 5 (very unimportant). It was deemed important to include multiple measure of attributions and emotions. Ranking and rating measures were collected because the data yielded from these two procedures are not identical (cf. Biernat & Manis, 1994). Participants then were instructed to turn the page and repeat this process for the kinds of emotions they would experience following an A (F). Again, more diverse negative emotions were used than positive emotions.

Finally, participants rated on 5-point scales how likely it was that they would get the same grade on the next exam, whether they or someone else was responsible for the grade, whether they had control over their grade, and whether this grade predicted the grades they would receive in other courses.

Results

Questionnaire data

t-tests found a significant gender difference for locus of control and depression, both $ts(247) = 2.64$, $ps < .009$, with females showing a more external locus of control and scoring higher on depression. No gender differences in the LOT or self-esteem were found, $t(247) < 1$; $t(247) = 1.14$, $p < .26$, respectively.

Gender differences in causal attributions for success and failure

Gender differences in checking potential causes as actual causes of success and failure were analyzed by means of χ^2s. Gender differences in the rankings and ratings of the importance of potential causes were tested via 2 (participant gender) x 3 (gender-type of subject matter) ANOVAs. To avoid capitalizing on chance, only if the interaction between participant gender and gender-type of the subject matter was at least $p < .15$ were gender differences within each individual subject matter calculated. The analyses for each cause are based on those causes which were checked, ranked, and rated by participants. Therefore, analyses of the various causes are based on different Ns. Because most analyses are based on very small cell sizes, results lower than $p < .12$ are interpreted.

Success outcomes. By far the most frequently checked causes by males and females for an A were "paid attention" and "studied" (see Table 1). Females more often checked "paid attention",

$\chi^2(1) = 3.04$, $p < .09$, and "studied", $\chi^2(1) = 5.04$, $p < .03$, as causes of an A than did males. Females also checked "motivated" more often than did males for Algebra, $\chi^2(1) = 3.28$, $p < .07$. Ability was checked more often by females as a cause for an A in English, $\chi^2(1) = 5.49$, $p < .02$, whereas it was checked more frequently by males for an A in Algebra, $\chi^2(1) = 3.09$, $p \leq .08$.

In accord with the hypothesis that gender differences in causal attributions would depend on the gender-type of the subject matter, the interactions between participant gender and subject matter were significant for the rankings and ratings of interest as a cause for an A, $F(2, 37) = 4.13$, $p < .03$; $F(2, 38) = 2.42$, $p < .11$. Females ranked ($M = 2.7$) and rated ($M = 2.0$) interest as a more important cause than did males ($M = 4.2$, $M = 3.0$, respectively) only for English, $t(12) = 2.18$, $p < .06$; $t(12) = 1.73$, $p < .12$, respectively. However, males rated interest ($M = 1.7$) as more important for an A in Algebra than did females ($M = 2.6$), $t(16) = 2.26$, $p < .04$. The interaction between participant gender and subject matter was significant for rankings of luck, $F(2, 18) = 3.35$, $p < .06$. Males ranked luck higher ($M = 2.5$) than did females ($M = 4.2$) for History only, $t(10) = 2.33$, $p < .05$. The interaction between participant gender and subject matter was significant for ability ratings, $F(2, 46) = 3.12$, $p < .06$. In Algebra only, males ($M = 1.7$) rated ability as more important for an A than did females ($M = 2.9$), $t(23) = 2.84$, $p < .01$.

Failure outcomes. Females were more likely than males to check task difficulty as a cause for an F in Algebra only, $\chi^2(1) = 3.09$, $p < .08$ (see Table 2). Males indicated that they did not study more frequently than did females for English, $\chi^2(1) = 2.85$, $p < .10$.

The interaction between participant gender and subject matter was significant for rankings of not being interested, $F(2, 56) = 2.79$, $p < .07$. Males ($M = 2.1$) were more likely than females ($M = 3.2$) to rank not being interested in English as a cause of their F, $t(20) = 1.71$, $p < .11$. Males in general ranked and rated a lack of studying higher ($M = 1.7$; $M = 2.0$) than did females ($M = 2.5$; $M = 2.6$), $t(66) = 2.24$, $p < .03$; $t(67) = 1.68$, $p < .10$, respectively. Females in general ($M = 3.0$) ranked an absence of ability more highly than did males ($M = 3.8$), $t(50) = 1.66$, $p < .11$. These results do suggest that males' causal attributions are more self-enhancing than are females'. While the gender differences in causal attributions for successful outcomes were domain-specific, more general gender differences in causal attributions emerged for failure outcomes.

Gender differences in feelings experienced after success and failure

Success outcomes. Males were more likely to check confidence as an experienced feeling after an A than did females, $\chi^2(1) = 2.41$, $p < .12$ (see Table 3). Females were more likely to check feeling proud than were males in History, $\chi^2(1) = 2.83$, $p < .10$, and felt more motivated by their success in Algebra than did males, $\chi^2(1) = 6.90$, $p < .009$.

The interaction between participant gender and subject matter was significant for ratings of how proud participants would feel, $F(2, 100) = 2.93$, $p < .06$. Females rated feeling proud ($M = 1.2$) more strongly than did males ($M = 1.7$) for History, $t(33) = 1.93$, $p < .07$. The interaction between participant gender and subject matter was significant for ratings of how happy participants would feel, $F(2, 90) = 3.49$, $p < .03$. Females rated feeling happy ($M = 1.6$; $M = 1.8$) more strongly than did males ($M = 2.4$; $M = 2.6$) for History, $t(30) = 2.12$, $p < .05$, and English, $t(28) = 1.82$, $p < .08$. The interaction between participant gender and subject matter was significant for ratings of how confident participants would feel, $F(2, 85) = 2.27$, $p < 11$. Females ($M = 1.5$) rated feeling confident higher than did males ($M = 2.3$) for History, $t(25) = 1.77$, $p < .09$.

Failure outcomes. Females were more likely than were males in general to check feeling like a failure, $\chi^2(1) = 3.36$, $p < .07$ (see Table 4). In addition, females checked feeling ashamed, $\chi^2(1) = 2.43$, $p < .12$, more frequently for History than did males.

The interaction between gender and subject matter was significant for "worried about others' reactions", $F(2, 23) = 3.46$, $p < .06$. Females ($M = 2.1$) ranked worrying about others more highly than did males ($M = 6.0$) in History only, $t(8) = 2.97$, $p < .03$. Males ($M = 2.0$) ranked feeling worried about the future higher than did females ($M = 2.6$), $t(100) = 2.45$, $p < .02$. The interaction between gender and subject matter was significant for the rating of shame, $F(2, 43) = 3.18$, $p < .06$. Females ($M = 1.9$) rated feeling ashamed higher than did males ($M = 3.0$) for English, $t(21) = 1.91$, $p < .08$, whereas males ($M = 1.0$) rated it higher than females ($M = 2.7$) did for History, $t(12) = 1.73$, $p < .12$.

Stability, responsibility, controllability, and globality ratings

Between-participants ANOVAs with gender, subject matter, and grade (2 x 3 x 2 design) were calculated for stability, responsibility, controllability, and globality ratings. The main effect for grade was highly significant for stability ratings, $F(1, 241) = 119.22$, $p < .0001$, with participants who imagined they had received an A believing that another A was much more likely in the future than did participants who had received an F believed they would receive another F. No significant effects emerged for responsibility and control ratings. The interaction between subject area and grade was significant for globality ratings, $F(2, 240) = 3.72$, $p < .03$. The interaction indicates that participants who imagined receiving an F were much less likely to indicate that this grade would predict grades in other courses than did participants who had received an A did. This effect was strongest for History. None of the results were substantially changed when the analyses were re-run as ANCOVAs with locus of control scores and depression scores (for which gender differences had been found), as covariates. In summary, no gender differences on the dependent variables stability, responsibility, controllability, and globality were found.

Discussion

The results indicate that gender differences in causal attributions do exist. As was found in previous research (Erkut, 1983; Ickes & Layden, 1978; Parsons, Meece, Adler, & Kaczala, 1982; LaNoue & Curtis, 1985; Wiegers & Frieze, 1977), females compared to males favored effort attributions ("paid attention" and "studies") for successful outcomes. For failure outcome, however, males more than females thought that a lack of studying was responsible. Thus, males protect their self-confidence in failure situations by blaming a poor performance on an unstable cause that can be changed in the future. Females ranked lack of ability as a more important cause for an F than did males. This reveals a much more self-enhancing pattern of causal attributions for males.

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denigrating attributions for self-confidence, motivational deficits may also occur. For example, the performance of participants who internalized failures became slower and performed worse following failures, whereas individuals who externalized their failures were not adversely affected by failure experiences (Ickes & Layden, 1978; Newman & Stevenson, 1990; Peterson & Barrett, 1987). Not surprisingly, females' performance is more adversely affected by failures than is males' (Ickes & Layden, 1978).

Given the existence of gender differences in causal attributions, it is not surprising that females and males also differ in the emotions experienced after a success or failure. Males indicated that they would derive more confidence after receiving an A than did females. Attributing success to ability thus boosts confidence much more so than effort attributions can. Females felt more like a failure than did males after receiving an F. Attributions of failure to a lack of ability rather than a lack of studying are likely to undermine self-confidence.

This research also demonstrates that gender differences in causal attributions depend on the gender-type of the subject matter. Ability was more often checked as a cause for an A by females than males for English, whereas the reverse was true for Algebra. Similarly, females ranked interest as more important than did males for English, whereas males rated interest as more important than did females for Algebra. Males blamed an F on a lack of interest in English.

The data also indicate problems with the traditional research on causal attributions which uses only effort, task difficulty, ability, and luck ratings. Clearly the most commonly used attributions for a successful outcome were related to effort and revealed a positive behavioral intention towards academic work i.e., "paid attention", "studied", and "motivated". It is advisable to study these variables separately rather than aggregating them under the heading effort. Furthermore, luck was used rarely to explain success and was virtually never endorsed as a cause of failure. This replicates an early finding by Frieze (1976), yet luck is still unnecessarily included in most research on causal attributions. The most commonly used explanation for failure related to excessive test difficulty and either a lack of time or unwillingness to study. Again, it would behoove researchers to investigate the meaning of "did not study". The implications for emotional reactions to failure are likely to be different for an attribution to a lack of time compared to an unwillingness to study.

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Table 1. Percentage of Success Participants Who Checked a Cause

Checked Causes	Subject matter					
	English		Algebra		History	
	Females	Males	Females	Males	Females	Males
Paid attention	100	100	100	88	95	87
Studied	93	88	97	88	100	80
Motivated	47	63	66	38	35	47
Easy test	47	50	48	63	30	53
Good at this	73	31	41	69	30	47
Interested	40	38	31	44	50	40
Lucky	27	13	21	13	30	27

Table 2. Percentage of Failure Participants Who Checked a Cause

Checked Causes	Subject matter					
	English		Algebra		History	
	Females	Males	Females	Males	Females	Males
Difficult test	79	69	89	67	79	93
No time to study	63	46	74	60	50	60
Did not study	42	69	44	53	50	53
Not interested	34	54	41	33	64	53
Not good at	26	31	59	33	43	20
Studied wrong material	39	54	11	20	29	13
Did not pay attention	26	15	22	40	18	33
Not motivated	11	23	19	20	11	13
Unlucky	0	0	4	7	4	0

Table 3. Percentage of Success Participants Who Experienced an Emotion

Checked Emotions	Subject matter					
	English		Algebra		History	
	Females	Males	Females	Males	Females	Males
Proud	93	100	100	94	100	87
Happy	93	88	90	81	85	87
Confident	93	88	83	94	60	87
Relieved	67	81	86	75	85	67
Motivated	43	57	72	28	65	73

Table 4. Percentage of Failure Participants Who Experienced an Emotion

Checked Emotions	Subject matter					
	English		Algebra		History	
	Females	Males	Females	Males	Females	Males
Disappointed	97	100	96	87	89	80
Worried about future	79	69	89	47	71	87
Angry at myself	76	85	70	60	64	67
Ashamed	45	31	37	47	36	13
Feel like a failure	32	23	33	7	29	20
Worried about others	18	31	15	7	25	7
Angry at other	8	0	11	7	11	13

Table 1. Percentage of Success Participants Who Checked a Cause

Checked Causes	Subject matter					
	English		Algebra		History	
	Females	Males	Females	Males	Females	Males
Paid attention	100	100	100	88	95	87
Studied	93	88	97	88	100	80
Motivated	47	63	66	38	35	47
Easy test	47	50	48	63	30	53
Good at this	73	31	41	69	30	47
Interested	40	38	31	44	50	40
Lucky	27	13	21	13	30	27

Table 2. Percentage of Failure Participants Who Checked a Cause

Checked Causes	Subject matter					
	English		Algebra		History	
	Females	Males	Females	Males	Females	Males
Difficult test	79	69	89	67	79	93
No time to study	63	46	74	60	50	60
Did not study	42	69	44	53	50	53
Not interested	34	54	41	33	64	53
Not good at	26	31	59	33	43	20
Studied wrong material	39	54	11	20	29	13
Did not pay attention	26	15	22	40	18	33
Not motivated	11	23	19	20	11	13
Unlucky	0	0	4	7	4	0

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